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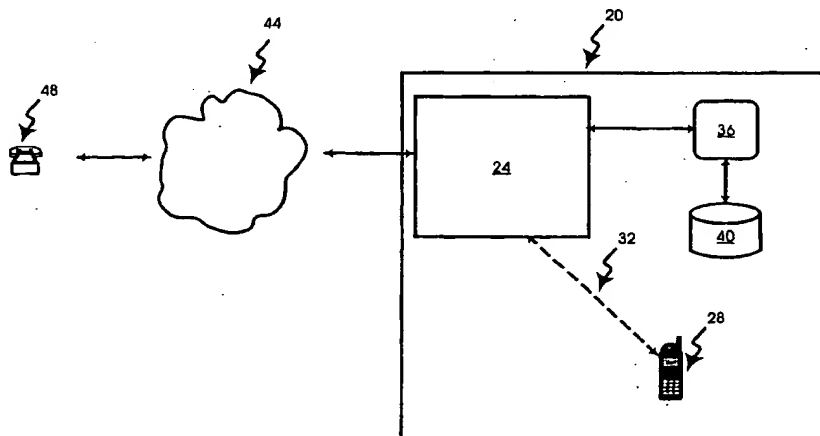|	
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(71) Applicant *(for all designated States except US)*: SOMA NETWORKS, INC. [US/US]; Legal Department, Suite 2000, Wharfside Bldg., China Basin Landing, 185 Berry Street, San Francisco, CA 94107 (US).

(72) Inventor; and
(75) Inventor/Applicant *(for US only)*: WILK, Daniel [CA/CA]; 129 Doudan Avenue, Toronto, Ontario M4S 1V5 (CA).

(74) Agents: CURRIER, T., Andrew et al.; Soma Networks, Inc., 312 Adelaide Street West, Suite 700, Toronto, Ontario M5V 1R2 (CA).

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(54) Title: METHOD AND SYSTEM FOR CALL ANSWERING

(57) **Abstract:** The present invention provides a novel system, method and apparatus for answering a telephone call. In one aspect of the invention, there is provided a system for call answering that includes a switch for connecting a telephony device to incoming calls received from callers connected to the switch via a telephone network. The switch is also connected to a processing unit and a storage device that contains a plurality of pre-recorded messages. When a callee at the telephony device receives an incoming call during a meeting (or at some other inconvenient time) and yet the callee wishes to respond to the caller, then the callee can provide (via a keypad on the telephony device) message selection criteria to the processing unit. The processing unit can then assemble an outgoing message based on the message selection criteria. The message is assembled from from the plurality of messages saved on the storage device. Having assembled the message, the processing unit can then play that outgoing message to the caller. In this manner, the callee is afforded a way to discretely respond to the caller without having to interrupt the meeting (or other activity that makes it inconvenient for the callee to answer the call.)

METHOD AND SYSTEM FOR CALL ANSWERING

FIELD OF THE INVENTION

The present invention relates to a system, apparatus and method of providing enhanced
5   features in a telecommunications system. More specifically, the present invention relates to a
method and system for answering telephone calls.

BACKGROUND OF THE INVENTION

Telephone networks are increasing in sophistication, and now offer a range of enhanced
calling features to subscribers. Such calling features include voice mail, call forwarding, call
10   waiting and Caller ID, and can help a subscriber to manage incoming telephone calls. For example,
Caller ID allows a subscriber to screen incoming calls.

At its most simple, Caller ID allows the person receiving a call (the callee) to identify the
caller and then choose whether to answer the call based on caller's identity. For example, during a
meeting, a callee with Caller ID service may leave his wireless phone 'on'. If the callee should
15   receive a call during the meeting, the identity of the incoming caller will be displayed on the callee's
phone display. If the call is urgent, the callee may elect to leave the meeting and accept the call.

Alternatively, the callee may elect to ignore the call, perhaps muting the ringer of the
telephone, and/or direct the incoming call to the callee's voicemail.

Many mobile telephones also include a silent ringer which can signal an incoming call,
20   typically by vibrating the handset, without making an noise. Thus, it is possible to receive a
telephone call in circumstances wherein it is otherwise socially inappropriate to answer a call, such
as during the showing of a movie at a movie theatre. In such an event, the user can only allow the
call to be forwarded to voice mail, for subsequent follow-up, or, if the mobile telephone includes
Caller ID features, the user can note the telephone number and move to another location wherein it is
25   socially acceptable to return the call.

As is apparent, the callee's choices in these situations are limited. Thus, the callee can face
the dilemma of being unable to answer a call, yet needing to do more than ignore the call or direct it
to voice mail which current calling features do not permit. There are many other situations in which

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a callee may desire, or require, the ability of answering or otherwise responding to an incoming call without having to interrupt an ongoing activity or merely sending the call to voicemail.

One situation addressed by the prior art is where the callee is engaged in a dial-up internet connection over a PSTN telephone line. It is well known that during such a dial-up connection, the
5   callee may receive one or more telephone calls from a caller over that PSTN telephone line. A caller in this situation is typically faced with busy signals or voice mail – however, the callee may be unaware that there is an urgent incoming call. In order to address this situation, U.S. Patent 5,809,128 teaches a method and apparatus for permitting notification and control of blocked incoming calls over a data network. Blocked incoming calls over the PSTN are redirected to a
10   subscriber proxy, which keeps track of an internet terminal being used by the callee, and sends a message to the callee at that internet terminal. The callee can then interact with the caller via the internet terminal to, for example, redirect the incoming call to the callee's cell phone, or redirect the incoming call the callee's voicemail. In any event, the callee is notified that the caller is attempting to reach the callee. However, U.S. Patent 5,809,128 is limited to situations where the callee is
15   already in a telephone call (i.e. an incoming call from the caller is blocked) and where the callee is proximal to an internet terminal.

Overall, it can be seen that the prior art is insufficient to allow a callee to manage incoming calls in certain situations.

20   **SUMMARY OF THE INVENTION**

It is an object of the present invention to provide a novel system, apparatus and method for call answering that obviates or mitigates at least one of the above-identified disadvantages of the prior art.

According to one aspect of the present invention, there is provided an apparatus for
25   answering a telephone call comprising: a switching device for connecting to an incoming telephone call from a caller; a storage device for storing a plurality of predefined outgoing messages; a telephony-interface device operable to receive message selection criteria from a callee; and a processing unit connected to each of the devices, the processing unit operable to assemble an outgoing message based on the criteria. The processing unit is further operable to output the selected
30   message to the caller via the switching device.

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The present invention provides a novel system, method and apparatus for answering a telephone call. In an aspect of the invention, there is provided a system for call answering that includes a switch for connecting a telephony device to incoming calls received from callers connected to the switch via a telephone network. The switch is also connected to a processing unit

5 and a storage device that contains a plurality of pre-recorded messages. When a callee at the telephony device receives an incoming call during a meeting (or at some other inconvenient time) and yet the callee wishes to respond to the caller, then the callee can provide (via a keypad on the telephony device) message selection criteria to the processing unit. The processing unit can then assemble an outgoing message based on the message selection critiera. The message is assembled

10 from from the plurality of messages saved on the storage device. Having assembled the message, the processing unit can then play that outgoing message to the caller. In this manner, the callee is afforded a way to discretely respond to the caller without having to interrupt the meeting (or other activity that makes it inconvenient for the callee to answer the call.)

15 **BRIEF DESCRIPTION OF THE DRAWINGS**

Preferred embodiments of the present invention will now be described, by way of example only, with reference to the attached Figures, wherein:

Figure 1 is a schematic representation of a system for call answering in accordance with another embodiment of the invention; and,

20 Figure 2 is a flow-chart of a method for call answering in accordance with another embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to Figure 1, a system for call answering is indicated generally at 20. System

25 20 includes a switch, which in a present embodiment is a wireless base station 24. Base station 24 is operable to manage telephone calls to and from a telephony-interface device, which in a present embodiment is a wireless telephone 28. Telephone 28 communicates with base station 24 via a wireless link 32, which can be based on any wireless protocol such as TDMA, FDMA, CDMA, GSM and the like. While the following discussion primarily concerns wireless (mobile) telephony

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devices, it will be understood that, in general, any type of switch, telephony-interface device and link can be used, such as an SS7 switch connected via a twisted-pair wired link to a plain-old-system-system (POTS) telephone or a rich-featured telephone with a central processing unit, display device and memory. (As used herein, the term rich-featured telephone is intended to comprise a telephony device which, at a minimum, includes a dial keypad, handset or equivalent and a display capable of displaying alpha numeric sequences, such as Caller ID and/or configuration information.)

Base station 24 is also connected to a processing unit 36 and a storage device 40. Processing unit 36 can be any known type of computing device, such as a SPARC server, and storage device 40 can be any known type of storage, such as a redundant array of independent discs (RAID). Processing unit 36 and storage device 40 can be located anywhere within system 20 in relation to telephone 28 and base station 24. For example, processing unit 36 and storage device 40 can be located at a base station controller connected to a plurality of base stations 24. Alternatively, processing unit 36 and storage device 40 can be implemented in a distributed manner across an entire network of computers. It is also contemplated that, where sufficient processing power and memory permits, processing unit 36 and storage device 40 can be integrated directly into, or otherwise local to, wireless telephone 28. Other implementations and locations for processing unit 36 and storage device 40 will occur to those of skill in the art.

Storage device 40 is operable to store a plurality of outgoing messages. These outgoing messages are associated with telephone 28, and can be predefined by the service provider of base station 24, or can be defined by the subscriber of telephone 28 using a configuration interface offered by the service provider. One suitable configuration interface is an interactive-voice-response (IVR) configuration system used to create outgoing messages in existing voicemail systems. However, other types of configuration systems can be used, as will occur to those of skill in the art. Such a configuration interface can be resident on processing unit 36 and accessible, as desired by the subscriber, from telephone 28 via base station 24, or any other telephony device that can connect to processing unit 36.

Processing unit 36 is operable to assemble, according to message selection criteria provided by the callee, an outgoing message that uses at least one of the messages saved on storage device 40. Processing unit 36 is further operable to output the assembled outgoing message to a caller via base station 24.

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System 20 is also connected a telephone network 44, which in turn is connected to a caller telephone 48. In a present embodiment, caller telephone 48 is a plain-old-system-system (POTS) telephone and network 44 is the public-switched-network-network (PSTN). It will thus be apparent that network 44 includes a switch that is the connection-point for telephone 48, and that the switch manages, in cooperation with other switches in network 44, calls to and from caller telephone 48. It is to be understood that caller telephone 48 could also be a wireless telephone or rich-featured telephone, and that in general, caller telephone 48 is any type of voice terminal that allows a caller to make telephone calls over network 44. It will now be apparent that base station 24 is operable to process an incoming telephone call from caller telephone 48, and to direct that incoming call to a callee at wireless telephone 28.

A method for call answering in accordance with the present invention will now be discussed with reference to the flow-chart shown in Figure 2. In order to assist in the explanation of the method, reference will be made to the foregoing discussion of system 20 and Figure 1.

In order to further assist in the explanation of the method, it will be assumed that the callee at wireless telephone 28 is about to enter a meeting. The callee expects that either his stock broker, 'Bill', or his wife 'Susan' may try to call him while he is in the meeting. The callee has also considered that an unexpected caller may attempt to call while the callee in the meeting. Accordingly, at a suitable time, and before entering the meeting, the callee prerecords the following three messages on and saves them on storage device 40:

1. "I'm sorry, but I am in a meeting and can't get your call right now. I will call you back in about" X "minutes."
2. "Hi Susan, I'm in an important meeting at the moment. I should be finished in about" X "minutes."
3. "Hi Bill, I'm in a meeting. I'll call you in about" X "minutes."

The first message is intended to be directed to unknown callers, while the second and third messages are directed to his wife Susan, and his stock broker Bill, respectively. As should be apparent to those of skill in the art, various additional messages can have been predefined by the callee as desired.

When composing these messages, the callee defines space for the argument 'X' by, for example, pressing the zero key on the telephone dialing keypad at the appropriate point while recording each of the three messages. It is contemplated that most messages will have a single

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parameter for which a user can provide input, but messages can also be defined with two or more parameters (Y, Z, etc.) if desired and the callee defines the space for each parameter when defining the message.

As will be seen from the discussion below, the value of 'X' (and Y and Z, etc.) will be
5   entered, dynamically, on the keypad (or other user-input device) of wireless telephone 28 when a telephone call is received during the meeting, to indicate an appropriate value (e.g. ten) for the parameter, such as the amount of time the callee expects to elapse before the meeting ends or he can otherwise return the call or a different telephone number for the caller to call (e.g. "Hi Bill, I'm in a meeting. I'll call you in about ten minutes.") Appropriate values for a a parameter X can include
10 telephone numbers (e.g. "Hi, unfortunately I an unavoidably occupied right now. Please dial X to reach one of my colleagues who can help you) or other information.

The value for parameter X can be entered directly from the keypad, i.e. – press the 1 key and then the '0' key, followed by a predefined delimiter key, such as the # key, which indicates that the input is finished, to input the value 10. The value for a parameter X can also be predefined by the
15 callee and selected according to a set of prompts, also predefined by the callee, and displayed or otherwise indicated by telephone 28, i.e. – a set of prompts such as "press 1 for Microsoft, press 2 for Cisco, press 3 for Intel" can be displayed or a set of similar voice prompts can be provided at the earpiece of telephone 28.

By predefining appropriate values for parameters, sophisticated messages can be assembled,
20 i.e. "Hi Bill, I'm tied up in a meeting. Please X my Y shares and I'll call you back in Z minutes to confirm," where X has predefined values of "buy" and "sell" associated with it, Y has predefined values of Microsoft, Cisco and Intel associated with it and Z accepts a numeric input from the keyboard, as before.

In the example mentioned above, the callee enters the meeting and during the meeting, the
25 callee's wife, Susan, attempts to call the callee. Referring now to Figure 2, a method in accordance with a presently preferred embodiment of the invention begins at step 100. The caller, Susan, places a call from caller telephone 48 and dials the number of the callee's wireless telephone 28. At step 100, this incoming call is received by base station 24. In addition, base station 24 receives the Caller ID information for caller telephone 48. Base station 24 then notifies wireless telephone 28 that there
30 is an incoming call, and sends the Caller ID information received from caller telephone 48.

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At step 105, a signal is generated at the callee telephone. Once wireless telephone 28 receives the notification of the incoming call, wireless telephone 28 rings and/or flashes the display and/or vibrates according the callee's preferences to notify the callee of the incoming call. At the same time, the Caller ID information is displayed on the display of wireless telephone 28.

5   The method then advances to step 110 where it is determined whether the callee wishes to accept the incoming call. If the callee provides user-input to wireless telephone 28 indicating that he wishes to accept the call, (i.e. presses the "TALK" key) then the method advances to step 115 and wireless telephone 28 is connected to caller telephone 48 in the usual manner.

Alternatively, if at step 110 the callee provides user-input to wireless telephone 28 indicating

10   that he wishes to reject the call, then an interactive menu is offered to the callee, allowing the callee to select one of the predefined messages saved in storage device 40, and to provide input for the arguments defined for the message.

At step 120, the callee's message selection and parameter criteria is received. Continuing with the present example, it will be assumed that the callee sees, from reading the Caller ID

15   displayed on wireless telephone 28, that it is his wife, Susan, who is calling. Accordingly, the message criteria received from the callee can be the selection of the second message saved on storage device 40, and entry of the number fifteen to complete argument 'X', where fifteen is the number of minutes that the callee expects to elapse before the meeting ends. The actual keys pressed by the callee can therefore be "2#15#", where the # key is used as an input delimiter.

20   The method then advances to step 125, at which point the criteria received at step 125 is passed, via wireless base station 24 to processing unit 36. Processing unit 36 reviews the selection and selects the second message saved on storage device 40, and substitutes the word 'fifteen', (i.e. from a previously stored vocabulary of audio messages or from a text to speech engine at processor 36) for the argument 'X' within the second message.

25   The method then advances to step 130 where the message selected at step 125 is played to the caller (Susan) at caller telephone 48. Accordingly, the message: "Hi Susan – I'm in an important meeting at the moment. I should be finished in about fifteen minutes" is sent from processing unit 36 and outputted to caller telephone 48.

In a present embodiment, the incoming call and method then terminates. However, it is

30   contemplated that a variety of other options could be offered at this point. For example, after the

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message has competed, the caller at caller telephone 48 can be provided with the option to leave a message in a voicemail box designated by the callee, or offered the opportunity to provide a text message (for example, using the SMS protocol) that will appear on the display of wireless telephone 28, if telephone 28 is capable of such a service.

5   While the foregoing method discusses the embodiment in relation to answering a call in a meeting, it will be understood that the present invention is applicable to answering a call during any inconvenient time, such as during a meal, during a movie, or when the callee currently in a telephone call. Other inconvenient times that a callee may wish to discretely answer a telephone call will occur to those of skill in the art.

10   It is also contemplated that further functionality can be added to wireless telephone 28 whereby, for example, telephone 28 stores the caller's number, and the value given for the arguments 'X', 'Y', 'Z', etc. In this manner, the callee has a record of what message was given to a caller. Also, if an argument represented a time, telephone 28 can remind the callee to respond to the caller within the time period specified by the argument.

15   While the embodiments discussed herein are directed to specific implementations of the invention, it will be understood that combinations, sub-sets and variations of the embodiments are within the scope of the invention. For example, the present invention can be implemented on a callee telephone that does not have Caller ID – i.e. when the phone ring, the callee can simply select from, from memory, one of a plurality outgoing messages by pressing a key corresponding to the selected 20 outgoing message.

          The present invention can be applied to POTS telephone systems, which, as is known to those of skill in the art, does not typically include a display. When the callee's POTS phone rings and the callee answers, the switch attached to the POTS phone could continue to generate a ringback to the caller while presenting the callee with an IVR menu that prompts the callee to, for example: 1) 25 press "#" accept the call; 2) press "1" to send the caller to voicemail; or 3) press "2" to hear a list of outgoing messages that can be played to the caller. Optionally, the IVR menu prompt could be prefaced with an announcement of the incoming caller's identity, which could be generated using known text-to-speech engines. For example, when the callee picks of the phone, he could hear the prompt "The number 555-5555 is calling you. Press # to accept the call. Press 1 to send the call to 30 voicemail. Press 2 to hear a list of outgoing messages that can be played to the caller." It will now

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be apparent that other combinations of the foregoing with different types of telephone systems can be made, and that such combinations are within the scope of the invention.

It is also contemplated that different sub-sets of prerecorded outgoing messages could be offered to the callee based on the Caller ID of the incoming call. For example, a certain sub-set

5   of messages could be made available when the callee's spouse calls, while another subset of messages could be made available when the callee's stockbroker calls.

It is also contemplated that the present invention can be used in a variety of applications. For example, the invention can be used to facilitate the answering of responses to newspaper classified advertisements. For example, where the callee has placed a newspaper

10   classified advertisement that offers an apartment for rent, and the apartment has already been rented, then the callee can screen calls, based upon Caller ID, and select a pre-recorded message that tells the caller that the apartment has already been rented to avoid having to answer the telephone.

It is also contemplated that rules can be established by a callee, based upon Caller ID information and/or time and date information for example, so that unknown callers hear a predefined

15   message (such as, "The advertised apartment has been rented. If you still wish to leave a message, please do so after the beep." message mentioned above) while other callers are presented to the callee in the manner described above.

It is also contemplated that, where the callee cannot identify the incoming caller, the callee can be given the opportunity to simply direct the incoming call to a voicemail system, or to an

20   IVR menu that allows the caller to select an appropriate message. Thus, continuing with the newspaper advertisement example, the caller can be queried "If you are calling about the apartment for rent, press 1".

It is further contemplated that the present invention can be used where the callee is expecting callers who speak different languages. Accordingly, messages recorded in different

25   languages can be recorded and saved on storage device 40 – the message in the appropriate language being selectable, for example, by the callee based on the callee's knowledge of the caller's desired language.

It is contemplated that the components in system 20 of Figure 1 can be implemented in a variety of ways. For example, processing unit 36 and storage device 40 can be incorporated

30   directly into a telephony-device associated with the callee, such as a rich-featured telephone having a

display, central processing unit, and memory.

It is also contemplated that the actual management and/or selection of the outgoing message can be made from any device that allows the callee to view the Caller ID of the caller, and to select a desired outgoing message. Such a device need-not be enabled to actually carry a voice

5   telephone call, but can be simply connected to a base station 24 or other switch. Such a device can simply signal the callee of the existence of an incoming telephone call, and allow the callee to provide criteria that allows processing unit 36 and the callee to assemble an appropriate message to be played for the caller. Where such a device has an alphanumeric keyboard input device, then the callee can actually prepare a text message which can be played to the caller using a text-to-speech

10   generator within processing unit 36.

The present invention can also operate as an enhancement to call waiting features. Specifically, when a callee who has call waiting is on a call and is notified that another incoming call has arrived, the callee can provide a flash signal to base station 24 to place the existing call on hold, in the conventional manner, but then his telephone 28 assumes the above-mentioned limited

15   off-hook condition wherein the callee can assemble a message or answer the second call in the conventional manner, by going to an off-hook condition, as desired.

The present invention provides a novel, system, method and apparatus for answering telephone calls that allows the callee to maintain a degree of privacy while providing a personal response to a number of different callers. While a callee is in meetings, eating a meal or engaged in

20   a personal conversation, the callee can discretely acknowledge the caller's incoming call and send a personal message to the caller. If desired, the callee can also tell the caller when the callee will be available.

The above-described embodiments of the invention are intended to be examples of the present invention and alterations and modifications may be effected thereto, by those of skill in

25   the art, without departing from the scope of the invention which is defined solely by the claims appended hereto.

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We Claim:

1. A system for answering a telephone call comprising:

a switching device for connecting to an incoming telephone call from a caller;

5   a storage device for storing a plurality of predefined messages;

a telephony-interface device operable to receive message selection criteria from a callee; and,

a processing unit connected to each of said devices, said processing unit operable to assemble, according to said message selection criteria, an outgoing message using at

10   least one of said predefined messages, said processing unit further operable to output said outgoing message to said caller via said switching device.

2. The system according to claim 1 wherein said telephony-interface device includes an output device for notifying said callee of said incoming call.

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3. The system according to claim 1 wherein said telephony-interface device includes a decoding unit to receive data representative of a source of said incoming telephone call and a user-interface connected to said decoding unit operable to present said data to said callee as part of said signal.

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4. The system according to claim 3 wherein said user-interface is a text-to-speech converter that announces said source at an earpiece connected to said telephony-device.

5. The system according to claim 1 wherein said decoding unit is a Caller ID unit and said

25   data is a Caller ID stream.

6. The system according to claim 1 wherein said switch is a wireless base station.

7. The system according to claim 6 wherein said telephony-device is a mobile phone.

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8. The system according to claim 6 wherein said telephony-device is a fixed wireless phone.

9. The system according to claim 6 wherein said base-station houses said storage device
   and said processing unit.

10. The system according to claim 1 wherein said telephony-device is a rich-featured phone having said storage device and said processing unit incorporated therein.

11. The system according to claim 1 wherein said switch is an SS7 switch connected to the PSTN.

12. A system for answering a telephone call comprising:
    a switching device for connecting to an incoming telephone call from a caller;
    a persistent storage device for storing a plurality of predefined outgoing messages;
    a telephone handset operable to signal a callee of said incoming call and to receive
       message selection criteria; and,
    a processing unit interconnecting said devices and said handset, said processing unit
       operable to select one of said messages based on said criteria, said processing unit
       further operable to output said selected message to said caller via said switching
       device.

13. A telephony-device comprising:
    a network interface connectable to a switch;
    a call-processing unit for processing a telephone call carried via said interface;
    a signaling device for indicating the existence of an incoming call to said user;
    an input device for receiving message selection criteria for transmission to said switch
       via said call-processing unit, said message selection criteria indicating one of a
       plurality of outgoing messages to be presented to an incoming caller.

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14. The telephony-device according to claim 13 further comprising:

an earpiece for presenting an audio signal extracted from said call by said processing

unit; and.

5   a microphone for receiving a voice signal from a user for encoding by said processing

unit and transmission to said switch.

15. The telephony-device of claim 13 wherein said telephony-device is a POTS telephone.

10   16. The telephony-device of claim 13 wherein said telephony-device is a mobile phone.

17. The telephony-device of claim 13 wherein said signaling device causes said telephony-

device to vibrate as a means of signaling.

15   18. The telephony-device of claim 13 wherein said signaling device is a display unit capable

of displaying text messages.

19. A method for answering an incoming telephone call from a caller comprising the steps

20   of:

receiving message selection criteria from a callee if said callee rejects said incoming call;

assembling an outgoing message based on said criteria; and,

presenting said outgoing message to said caller.

25   20. A method for call answering comprising the steps of:

receiving an incoming telephone call from a caller for a callee;

signaling said callee of said incoming call;

determining whether said callee answers said incoming call;

connecting said caller and said callee if said callee accepts said incoming call and

30   terminating said method;

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receiving message selection criteria from said callee if said callee rejects said incoming call;

assembling an outgoing message based on said criteria; and,

presenting said outgoing message to said caller.

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21. The method according to claim 20 wherein said signaling step includes the presentation of a visual message readable by said caller.

22. The method according to claim 20 wherein said signaling step includes the presentation

10   of an audio signal.

23. The method according to claim 22 wherein said audio signal is an audio message indicating an identity of said caller.

15   24. The method according to claim 23 further comprising the step of playing a ring-back signal to said caller until said determining step is completed.

25. A method for answering an incoming call comprising the steps of:

20   receiving, at a switch, an incoming telephone call from a caller for a callee;

generating a signal at a callee's telephone that said incoming call is intended for said callee;

generating a ring-back signal at said caller's telephone;

determining whether said callee answers said callee's telephone;

25   offering said caller a plurality of menu choices through an IVR menu at said callee's telephone, said choices reflecting a selection of ways of answering said incoming call;

terminating said ring-back signal; and,

answering said incoming call according to said callee's selected choice

30   26. The method according to claim 25 wherein said choices include at least one of

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connecting said caller to said callee, sending said caller to a voicemail service, and playing an outgoing message to said caller.

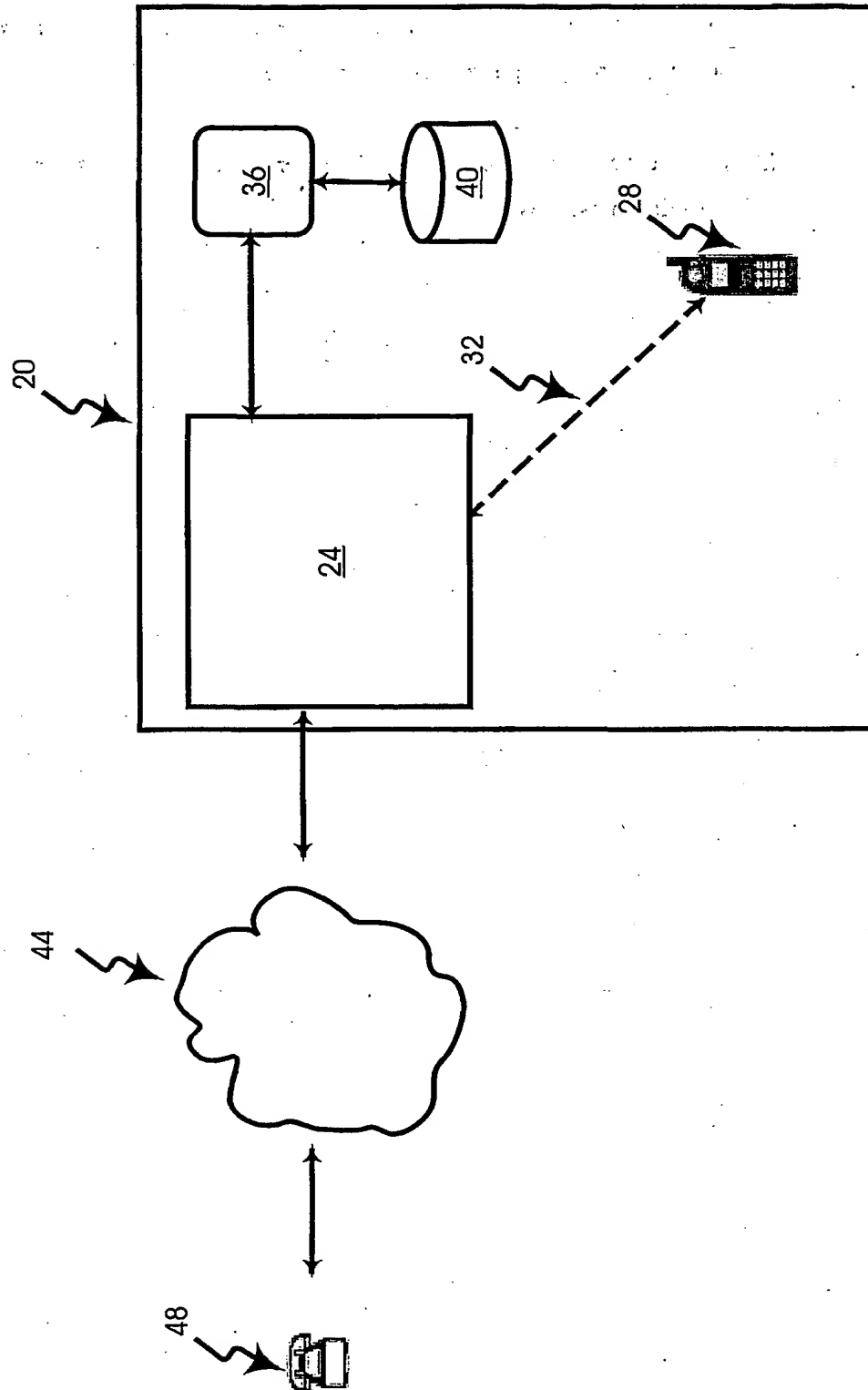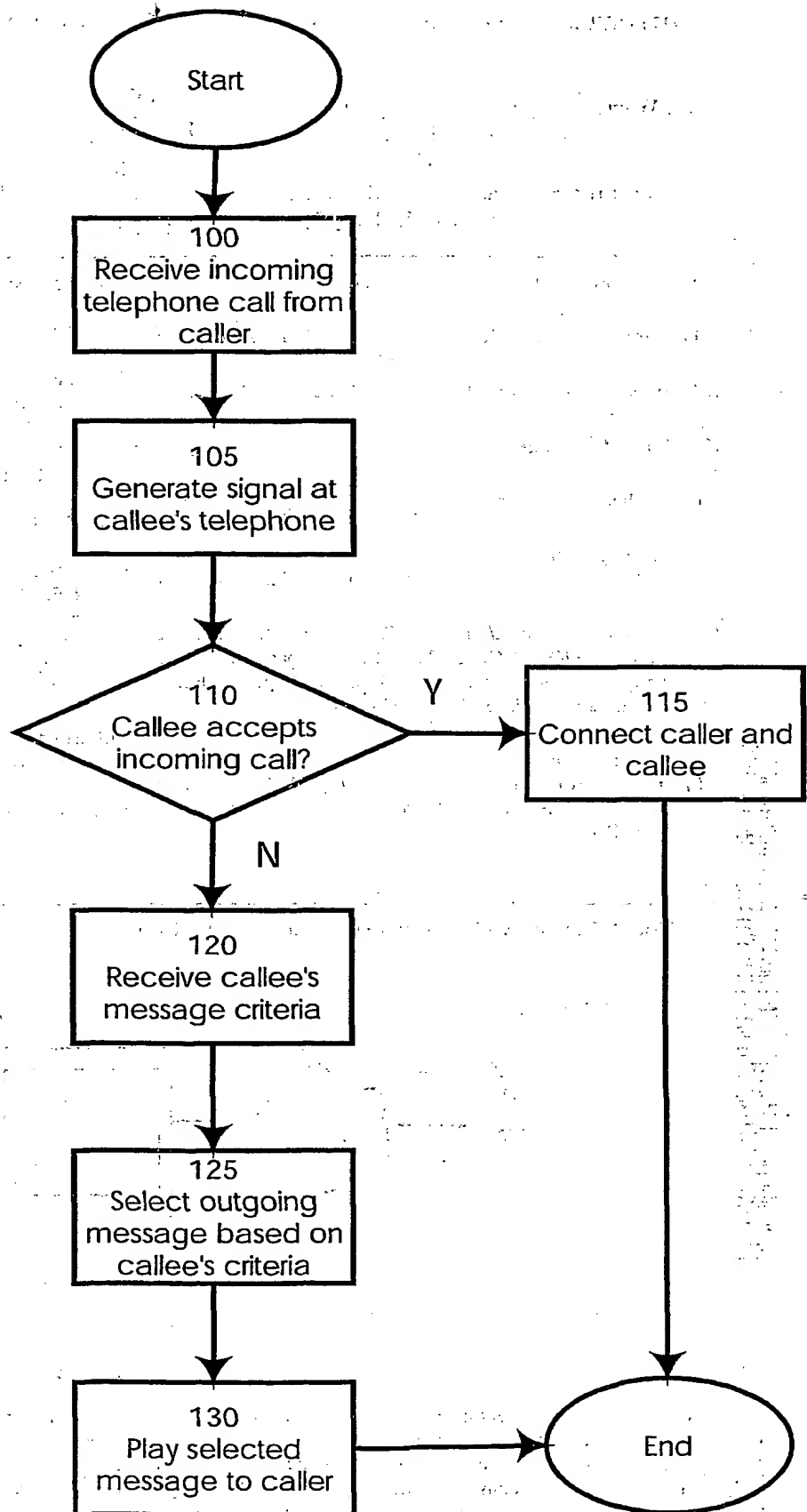27. The method according to claim 26 wherein said choices further include a plurality of outgoing messages.

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Fig. 1

Fig. 2

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                          ┌─────────┐
                         (   Start   )
                          └─────────┘
                               │
                               ▼
                    ┌──────────────────────┐
                    │         100          │
                    │  Receive incoming    │
                    │ telephone call from  │
                    │       caller         │
                    └──────────────────────┘
                               │
                               ▼
                    ┌──────────────────────┐
                    │         105          │
                    │   Generate signal at │
                    │  callee's telephone  │
                    └──────────────────────┘
                               │
                               ▼
                         ◇─────────◇
                        ╱    110     ╲         Y      ┌──────────────────────┐
                       ╱ Callee accepts╲──────────────│        115           │
                       ╲ incoming call?╱              │  Connect caller and  │
                        ╲             ╱               │       callee         │
                         ◇─────────◇                  └──────────────────────┘
                               │                                 │
                               │ N                               │
                               ▼                                 │
                    ┌──────────────────────┐                     │
                    │         120          │                     │
                    │   Receive callee's   │                     │
                    │   message criteria   │                     │
                    └──────────────────────┘                     │
                               │                                 │
                               ▼                                 │
                    ┌──────────────────────┐                     │
                    │         125          │                     │
                    │   Select outgoing    │                     │
                    │  message based on    │                     │
                    │   callee's criteria  │                     │
                    └──────────────────────┘                     │
                               │                                 │
                               ▼                                 ▼
                    ┌──────────────────────┐            ┌─────────┐
                    │         130          │            │   End   )
                    │   Play selected      │───────────▶│         │
                    │  message to caller   │            └─────────┘
                    └──────────────────────┘
```

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(71) Applicant (for all designated States except US): SOMA NETWORKS, INC. [US/US]: Legal Department. Suite 2000, Wharfside Bldg.. China Basin Landing, 185 Berry Street, San Francisco, CA 94107 (US).
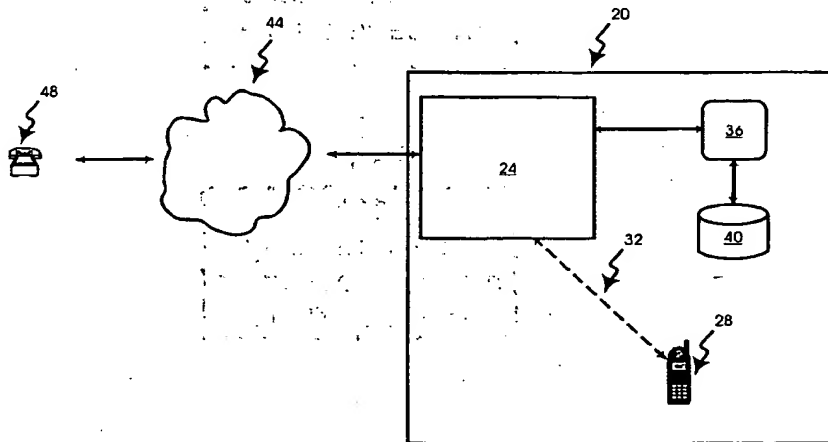
(72) Inventor; and
(75) Inventor/Applicant (for US only): WILK, Daniel [MX/CA]: 129 Doudan Avenue, Toronto, Ontario M4S 1V5 (CA).

(74) Agents: CURRIER, T., Andrew et al.: Soma Networks. Inc., 312 Adelaide Street West, Suite 700, Toronto, Ontario M5V 1R2 (CA).

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[Continued on next page]

(54) Title: METHOD AND SYSTEM FOR CALL ANSWERING

(57) Abstract: The present invention provides a novel system, method and apparatus for answering a telephone call. In one aspect of the invention, there is provided a system for call answering that includes a switch for connecting a telephony device to incoming calls received from callers connected to the switch via a telephone network. The switch is also connected to a processing unit and a storage device that contains a plurality of pre-recorded messages. When a callee at the telephony device receives an incoming call during a meeting (or at some other inconvenient time) and yet the callee wishes to respond to the caller, then the callee can provide (via a keypad on the telephony device) message selection criteria to the processing unit. The processing unit can then assemble an outgoing message based on the message selection criteria. The message is assembled from from the plurality of messages saved on the storage device. Having assembled the message, the processing unit can then play that outgoing message to the caller. In this manner, the callee is afforded a way to discretely respond to the caller without having to interrupt the meeting (or other activity that makes it inconvenient for the callee to answer the call.)

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/CA 01/00974

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04M3/436

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC, IBM-TDB, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category°	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 752 191 A (EPLER FREDERICK A ET AL) 12 May 1998 (1998-05-12) *Fuller, Accessible Technology*	1-3,5-8, 11-16, 18-27
Y	abstract; figures 16,20A,23,45,46,49 column 1, line 57 -column 5, line 13 column 6, line 59 -column 7, line 14 column 14, line 32 -column 16, line 27 column 17, line 5 -column 19, line 7 column 28, line 58 -column 29, line 13 column 33, line 58 -column 34, line 8 column 42, line 18 - line 31 column 65, line 21 -column 66, line 23 column 66, line 41 -column 67, line 47	4
Y	US 5 327 486 A (KRAMER MICHAEL ET AL) 5 July 1994 (1994-07-05) abstract column 1, line 61 -column 2, line 62	4

☐ Further documents are listed in the continuation of box C.   ☒ Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
11 September 2001	08. 01 2002

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Willems, B

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Box I   Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II   Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

    see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

    1-9, 11-27

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM   PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-9,11-27

> The invention relates to a service to which a subscriber can subscribe to screen incoming calls. The processing and storage of the data is located within the network. The subsequent area of search is H04M3

2. Claim : 10

> The invention relates to a adapted phoneset that can screen incoming calls based upon criteria programmed in the device. No interaction with the network as such is taking place for the purpose of realising the invention. The field where this application should be classified is H04M1

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